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Color Abnormalities in *Pseudemys scripta troostii* (Holbrook)

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Color abnormalities of turtles have been rarely reported. A gray specimen of *Gopherus agassizii* (Cooper) was mentioned by Grant (1936) and a "partial albino" of *Graptemys pseudogeographica pseudogeographica* (Gray) described by Burt (1944). The New York Zoological Society Bulletin (1908) figures a partially pigmented individual of *Malaclemys pileata littoralis* (W. P. Hay). No complete albinos have been reported to my knowledge.

The demand for small turtles as novelty pets has resulted in the collecting of many thousands of hatchling turtles annually in Louisiana. The bulk of the turtles shipped are of the genus *Pseudemys* as they are more hardy and more attractively colored than those of other genera. An examination of more than 30,000 hatchlings from south central Louisiana has disclosed strikingly limited abnormality of color pattern. Dealers and several collectors who have handled many thousands report similar experience.

The most frequent color abnormality results from the failure of the black pigment to appear. Such an individual has the dark green color of the carapace changed to a light olive green and all of the distinctive yellow lines normally bordered by black poorly defined. Three such individuals have been studied and collectors have reported that they occur frequently.

Three individuals with both the black and green pigment absent have been studied. One from a clutch of five, of which four were normal, has all the typical yellow lines and the wide postocular orange stripe present. The absence of green and black pigment prevents accentuation of these lines. The yellow pigment is present throughout the plastron except for those areas normally occupied by the green and black pigments (Fig. 1). These areas are evident because of their transparency. The carapace appears to be a uniform

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yellow color but closer examination makes apparent a pattern of yellow lines against a background of a slightly less yellow tinge. These lines form the same pattern as that observed in the normally pigmented individual (Fig. 1).

The absence of the black and green pigment of the head results in a decided change in the color of the postocular stripe. Normally an intense red, it is an orange-red in this individual. The limits of the red area are well defined. The eyes of the turtle are red except in a small area where some green color is apparent. Two of these turtles are now in the possession of Dr. James N. Gowanloch, State Biologist of Louisiana. One is preserved in the Tulane Collections in Vertebrate Zoology.

These abnormally colored individuals suggest that the coloration of this species is composed of three independently controlled patterns: that formed by the black pigment, the green pigment, and the red and yellow combinations.

Four complete albinos hatched by Harry Viosca in 1935 were retained alive for several months. The preserved specimens have no pigment and are semi-transparent, much of the internal organs being visible through the carapace and plastron. The turtles are otherwise normal. Mr. Viosca has stated that these were the only albinos he has observed among the more than two million small turtles he has seen in recent years.

The yellow and red turtle retained in captivity exhibited one striking difference in behavior from that of normal hatchlings in the same aquarium.. It would bask in bright sunlight for long periods of time and was always the last to leave the basking frame. Perhaps the lack of pigment prevents the normal increase of body temperature while basking (Cagle, 1947, p. 691). If so, we may have a partial key to an explanation of development of dark color patterns in many turtles.

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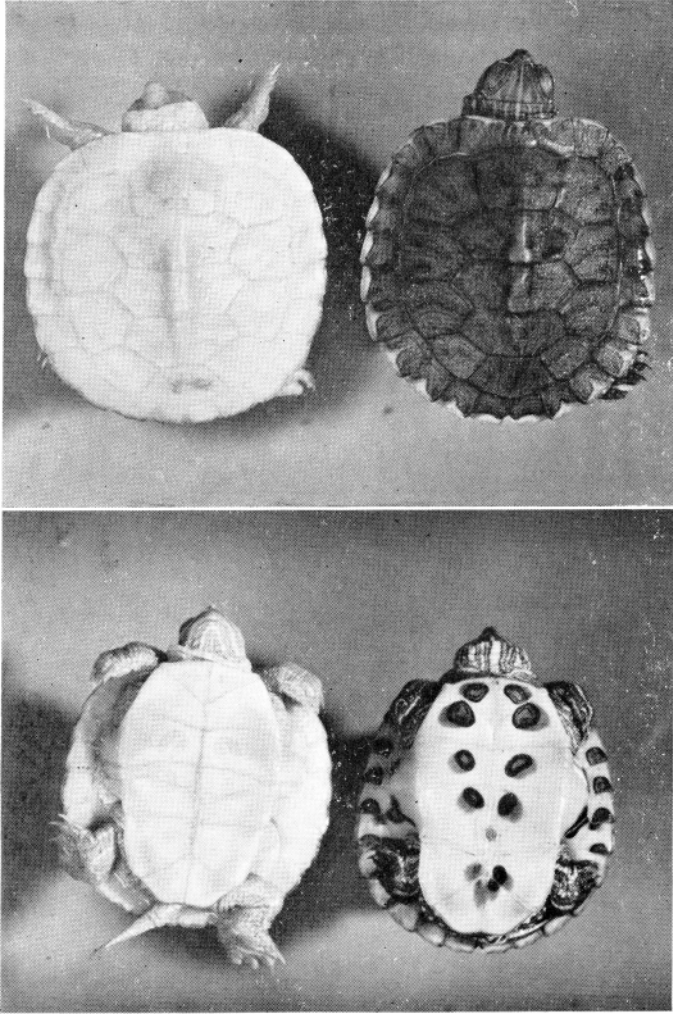


Figure 1

Above: The carapace of a yellow turtle and a normal one of the same size. The light yellow lines crossing the marginal plates are evident in both forms but are accentuated by the presence of black pigment in the normal individual.

Below: The plastron of a yellow turtle and a normal individual compared. The absence of black pigment in the plastral markings leaves circular areas without pigment. These appear as transparent rings.